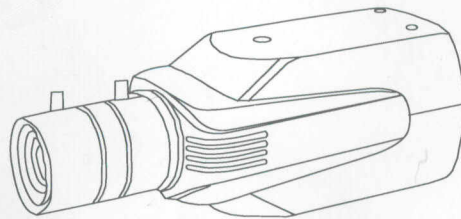## SUPER HIGH RESOLUTION COLOUR CAMERA

USER`S MANUAL

Thanks for purchasing our product.Before operating the unit,please read the instructions carefully and keep this manual for future reference.

Table of Contents

Brief Introduction

The Super High Resolution Colour Camera adopt advanced Digital Signal Processor (DSP) technology, which enhances picture to high quality and high resolution greatly, provides great function and more vivid image.

Features

1. Adopt 1/3" SONY Super HAD CCD
2. 540 TVL Super High Horizontal Resolution
3. OSD menu programmable set
4. Minimum illumination: 0.3Lux/F1.2（colour mode）；
   0.08Lux/F1.2（B/W mode）
5. Automatically change between colour mode and B/W mode according to the light inputting(Only the IR Cut filter removal Day/Night Camera)
6. Built-in function
   a. Mirror function
   b. Back light compensation mode
   c. Dynamic period: max 50dB
   d. 8 mask areas
   e. Auto and Manual White Balance
   f. Auto and Fixed Electronic Shutter
   g. Auto and Fixed Gain Control
   h. Electronic sensitivity extendible function
   i. Anti-color rolling function
   j. Flickerless function

Caution

1. Before installing and operating the unit, please read the manual carefully.
2. Precision components are contained in the camera,so please avoid violent vibration during the course of transit, maintenance and installation. For the sake of safety, please do not connect to power before installation completion.
3. Please abide by all the electric codes when using the unit.
4. Do not use corrosive or abrasive detergent for cleaning. Use lens paper or cotton stick with alcohol to clean the sensor board.
5. Under no circumstances to direct the camera to the sunlight or strong light sources, in order to avoid any damage to the lens and sensor.
6. Do not use the camera in situations beyond the rated operating temperature(-10℃~50℃),humidity(less 95%) or power source.
7. In times of malfunction, do not attempt to dismantle and service the camera by yourself .Please refer to qualified serving person-nel to repair or contract our technical department to solve the problems.

Warning: Prohibit the products to be rained or wet in case of fire or getting an electric shock.
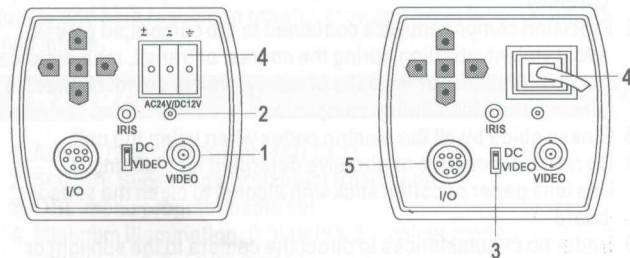
1. VIDEO: composite vidio signal output, the resolution of recom mend monitor must be over 600TVL.
2. LED: power indicator
3. IRIS Switch:
   DC: for DC-iris lens,
   Video: for video-iris lens

Figure:Auto iris connector Jack

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Figure:Auto iris connector Jack

| Pin	Video iris lens	DC iris lens
1	Power	Damp-
2	Null	Damp+
3	Video signal	Drive+
4	Ground	Drive-

It will get better image quality to adjust the iris on the back board while connecting to the DC iris lens.

4. Power input connector

a. AC24V(16-30V), connect the power cable to AC/DC compatible interface on back board of camera, be sure the ground interface is well connected to the system.

b.DC12V(9.1-20V), connect the power cable to AC/DC compatible interface on back board of camera, be sure that the positive and negative of power is matched with the signal $+$、$-$.

C.Main voltage input: 90-240VAC.

5. I/O port (Only the IR Cut filter removal Day/Night Camera)

1、RS232TX(Option)	Black
2、RX232 Rx(Option)	Brown
3、RS232GND	Orange
4、NC	Blue
5、NC	Green
6、GND	Yellow
7、Externalr-trigger input	White
8、+5 V	Red

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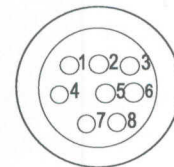
I/O port function：
RS232 is connect to Rs232 interface of PC(Option);
1、Second PIN of RS232serial port (Option)
2、Third PIN of Rs232serial port(Option)
3、RS232 GND
4、NC null unused
5、NC null unused
6、GND
7、External-trigger:external-trigger change Day/Night
mode, set "DAY AND NIGHT" as EXT(external-trigger
mode),low level effective， connect to PIN 6
(Yellow)effective.

8、+5V power

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● Center selection button to enter a menu or exit the menu.

● ● Move the icon vertically between the menus and options.

● ● Press the two keys to move the icon horizontally between the menus and options or enter submenus.

Main Menu Function

```
        MAIN   MENU

GENERAL              SET

BACKLIGHT            OFF

DAY AND  NIGHT   AUTO

PRIVACY              OFF

WBC  MODE           PUSH

AE   MODE            AE

INITIAL

EXIT:PRESS  MENU KEY
```

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GENERAL..

Select GENERAL SET on the main menu, press left or right key to enter GENERAL MENU for normal mode setup.

```
              GENERAL
CAMERA ID                 OFF
COLOR                     ON
MIRROR                    OFF
HI-RESOLUTION             ON
SHARPNESS                 OFF
COLOR SUPPRESS            OFF
APERTURE  SUPPRESS        OFF
EXIT:PRESS  MENU  KEY
```

Normal Mode Setup

CAMERA ID,set camera No. (000-255) through left and right key under Camera ID, the No. will be shown on the right top coner, default is OFF.

COLOR, set OFF, while AGC works, image will be changed into B/W to remove the splash which will appear with low light, default is ON.

MIRROR, default is OFF.

HI-RESOLUTION, default is ON, the resolution will be540TVL, it will be effective after restart while change setting.

SHARPNESS, set ON, image will be crisper, has three grades: Low, Middle, High, default is OFF.

COLOR SUPPRESS, default is OFF, while it is ON, the image will change into B/W on low light to enhance idetification of the images.

APERTURE SUPPRESS, default is OFF, set ON, the overlap of fine articles on low light can be reduced.

BACKLIGHT SET..

Enter the BACKLIGHT MODE SET menu through left or right key to set the backlight compensation mode

```
        BACKLIGHT  MODE  SET
BACKLIGHT  MODE            OFF
EXIT:PRESS  MENU  KEY

AE  MODE   MUST  BE  AE
```

BACKLIGHT MODE SET

Remember to set the **AE MODE ON** while setting the backlight mode!

```
     BACKLIGHT MODE SET
BACKLIGHT MODE      SENS
GAIN <x0-x4>        040
EXIT:PRESS MENU KEY
AE MODE  MUST BE AE
```

▶

```
     BACKLIGHT MODE SET
BACKLIGHT MODE      AREA1
UNWEIGHTED LEVEL    000
EXIT:PRESS MENU KEY
AE MODE  MUST BE AE
```

Set SENS OFF, the shutter work first, means the electronic shutter will adjust automatically, and gain only works when the shutter enhanced to 1/50s, (the period of gain is between 0-30dB), Set ON, the gain work first, means the gain will adjust automatically(period is between 000-255, default value is 40), and the electronic shutter will be 1/50s.

AREA MODE, total is 5 reference areas:

AREA5		
AREA3	AREA1	AREA4
AREA2		

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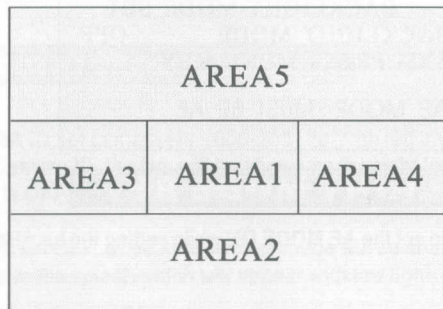
CENTER, LOWER 1/3, CENTER LEFT, CENTER RIGHT, UPPER 1/3. If choose the CENTER as the reference area, means the average light in the AREA1 will be the standard. Setup way: set the CENTER ON, then set the dynamic period of the other four areas on UNWEIGHTED LEVEL, the dynamic range is between 000-015, 000 is minimum, 015 is the maximal (50dB)

DAY AND NIGHT..

Enter the DAY AND NIGHT mode set(Only the IR Cut filter removal Day/Night Camera)

```
          DAY AND NIGHT
DAY AND NIGHT       AUTO
DAY TO NIGHT VALUE  212
NIGHT TO DAY VALUE  170
EXIT:PRESS MENU KEY
```

DAY AND NIGHT MODE SET

DAY AND NIGHT MODE SET: Auto/Day/Night/external trigger Mode optional. For external-trigger details refer to page 4-5.

Auto Mode:

Day to Night: switch to Night mode while gain higher than the set value(day to night value can be set from195 to 230 based on requirements).212by default.

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Menu Function

Night to Day: switch to Night mode while gain lower than
the set value(night to day value can be set from 155-to 185
based on requirements).170 by default.
Auto Mode：auto day/night switch IR Cut filter.Color at
day and change to B/W.
Day mode: turn off day/night switch ,won't removing IR Cut filter.
Day/Night mode: removing IR Cut filter in night switch to night mode,
high quality B/W picture.
External trigger: removing Day/Night IR Cut filter according to external
trigger signal.
Note: only Day/Night Mode camera will be induct IR, and improve
the night effect by removing IR Cut filter. Do not too close to object
in case of infrared light. Or it may cause to removing IR Cut filter
over and over again. Therefore choose the suitable infrared light
and adjust suitable angle according to environment in using.

MASK SET..

Enter the menu **PRIVACY** through the left or right key to set the mask
mode.

```
        MASK   SET
MASK NUMBER<1-8>      001
MASK SET              OFF
  H.START POSITION
  H.END POSITION
  V.START POSITION
  V.END POSITION
MASK COLOR            HOLD
EXIT:PRESS MENU KEY
```

Mask Area SET

8 mask areas can be set at most, step (if want to set the first mask
area):set the MASK NUMBER 001; set the MASK SET ON; recover
the masked area completely by changing the four frames; select the
shown color for the masked area, Lock, Grey, White, Black, Red,
Orange, Yellow，Green，Blue, Purple etc optional.
Same setting the next areas.

WBC MODE SET..

Enter the **WBC MODE** menu by left or right key to set the white
balance.

```
        WBC MODE SET
ANTI-COLOR ROLLING      OFF
AUTO TRACE WB           OFF
PUSH                    ON
INDOOR                  OFF
FLUORESCENT LIGHT       OFF
OUTDOOR                 OFF
MANUAL WB               ADJ
EXIT:PRESS MENU KEY
```

White Balance Mode Set

ANTI-COLOR ROLLING

If the AC frequency is not stable or different too much(for example, the electricity frequency is less 49.9Hz), the serious color rolling will appear, set the anti-color rolling ON, will remove or ease color rolling.

Please be sure to set the ANTI-COLOR ROLLING OFF while setting the white balance mode.

AUTO TRACE WB, camera will inspect color temperature continuously and adjust white balance automatically while color temperature is around 2,600-6,000K. The mode is the first chosen mode.

PUSH, while the color temperature is around 2,300-10,000K, set the PUSH ON, white balance can be adjusted exactly to get the real image color.

INDOOR, the mode is available for the indoor circumstance with daylight lamp, but if have lights of different color temperature indoor, it is possible not to get right white balance.

FLUORESCENT LIGHT, set the mode ON, can get better and much real image under the fluorescent light.

OUTDOOR, the mode is available for normal light outside, but it's possible not to get right white balance under circumstance of high color temperature such as setting sun light.

MANUAL WB, the mode is available to the stable circumstance with same light. Adjusting way: set manually through left and right key to get the best state.

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AE MODE SET..

Enter AE MODE menu through left or right key to set the electronic shutter and gain.

```
            AE MODE SET
    FLICKERLESS           OFF
    AE                    ON
    AI                    OFF
    AE SHUTTER            OFF
    MANUAL                OFF
    EXIT:PRESS MENU KEY
```

Electronic Shutter and Gain Set

FLICKERLESS, while video system of the camera doesn't match with the light frecency of the using circumstance (PAL for 60Hz, NTSC for 50Hz), flicker will apear. To avoid this, need modify the electronic shutter to 1/120s for PAL, 1/100s for NTSC.

While setting the electronic shutter mode, please be sure FLICKLESS OFF.

AE, camera will adjust automatically to get the best blooming effect during the stable range (1/50s-1/100,000s for PAL, 1/60s-100,000s for NTSC).

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AI, while using auto-iris lens, set AI ON, electronic shutter will be 1/50s for PAL, 1/60s for NTSC.

AE SHUTTER, set the camera's stable electronic shutter, 1/50s, 1/120s, 1/100s, 1/250s, 1/500s, 1/1000s, 1/2000s, 1/4000s, 1/10Ks, 1/100Ks optional.

MANUAL, under the Manual mode, electronic shutter and gain control can be set same time, 1/50s, 1/120s, 1/100s, 1/250s, 1/500s, 1/1000s, 1/2000s, 1/4000s, 1/10Ks, 1/100Ks optional for electronic shutter, 5dB, 13dB, 22dB, 30dB optional for gain.

INITIAL..

Select this will restore the factory default value. Select INITIAL, press left or right key to restore the factory default value, then reset.

Specifications

Image Sensor	1/3"SONY Super HAD CCD
Signal System	PAL/NTSC
Effective Pixels	752×582(PAL) 768×494(NTSC)
Resolution	540TVL
Minimum illumination	0.3Lux/F1.2 0.08Lux/F1.2,With IR cut filter Removal(Only Day/Night model)
S/N Ratio	>50dB
White Balance	AUTO 2000 TO 10000K
Shutter	PAL:1/50~1/100,000s NTSC:1/60~1/100,000s
Lens Mount	C/CS
Auto Iris	DC/VIDEO
Video Output	1.0Vp_p,75Ω
Power Supply	DC12V/AC24V or AC110V/AC220V
Power Consumption	<3.5W
Dimension	62×60×121mm
Weigh	500g
Operating temperature	-10℃~+50℃RH95%MAX
Control	On-screen dispaly（OSD）